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CENTRAL FAX CENTER****DEC 27 2007****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of:)	Before the Examiner
Jeffrey M. Gross et al.)	Bruce E. Snow
Serial No. 10/669,764)	Group Art Unit 3738
Filed September 24, 2003)	Ref. No. 4002-3424/PC889.00
REINFORCED FUSION IMPLANT)	

DECLARATION OF THOMAS A. SIMONTON

I, Thomas A. Simonton, declare as follows:

1. I am a named inventor of the subject matter disclosed and claimed in the above-identified application. I am over 18 years of age, and am otherwise competent to make this Declaration. Unless otherwise stated, I have actual knowledge of all the facts stated in this Declaration.
2. This Declaration is being submitted to establish conception and diligence toward a constructive reduction to practice of the subject matter claimed in the above-identified application in the United States on a date prior to September 18, 2003, which is the publication date of German reference DE 202 05 016 (the "German reference"). I understand that the German reference was cited by the patent examiner in an Office Action issued in my above-identified patent application.
3. The disclosed subject matter associated with Figures 1-12 of the present application was filed with the original application, which on information and belief has a filing date of September 24, 2003.
4. Jeffrey M. Gross and I conceived of the disclosed subject matter associated with all of the drawings of my above-identified application prior to September 18, 2003, while we were

Declaration Under 37 CFR §1.131
Application Serial No. 10/669,764
Page 1 of 3

both employed by Medtronic Sofamor Danek. The conception occurred earlier than the publication date noted above of the German reference. Dr. Gross is no longer employed by Medtronic, and on information and belief is not available at present to make a declaration on these issues.

5. To evidence conception of the disclosure of this application, attached as Exhibit A are disclosure documents concerning that subject matter, which include sketches of subject matter in this application. Those documents were created prior to September 18, 2003. The date of the drawing and other confidential or proprietary information has been redacted.
6. On information and belief, a draft of the present patent application was in process as of September 17, 2003. As part of my duties I worked with outside patent counsel Cary Reeves and internal patent counsel Jim Bindseil in preparing and filing the application. I received a draft of it prior to September 17, 2003 from Mr. Reeves, and as of September 17, 2003 I understood that the application was in the final stages of review by Dr. Gross, Mr. Bindseil and me prior to filing. On information and belief, the finally-reviewed application was electronically sent to outside counsel Brad Schepers on Monday, September 22, 2003 so that Mr. Schepers could file it. The drawings included in Exhibit B were a part of the draft received from Mr. Reeves, and were a part of the finally-reviewed application sent to Mr. Schepers.
7. I received and signed Declaration and Assignment documents for this application on Tuesday, September 23, 2003. On information and belief, it is my understanding that those documents were sent by e-mail from Mr. Schepers the previous afternoon, and the signed documents were sent to Mr. Schepers by overnight courier.
8. All acts and events described, identified, or referred to herein occurred in the United States.

Declaration Under 37 CFR §1.131
Application Serial No. 10/669,764
Page 2 of 3

9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 28 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.



Thomas A. Simonton
335 Avon Road
Memphis, Tennessee 38117
Citizenship: USA

12-17-2007
Date:

4002-3424-456973

Declaration Under 37 CFR §1.131
Application Serial No. 10/669,764
Page 3 of 3

EXHIBIT A

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INVENTION DISCLOSURE

**Medtronic**

SOFAMOR DANER

Disclosure No.

Sheet 1 of 5

Title of Invention: Stress reduction through conical pins for conventional and assembled bone

Project No. or Name

Inventor(s): Jeff Gross, Andy Simonson

Eng. Notebook No. & Pages

Date Conceived

Date Constructed

Date First Tested

Date Disclosed Outside Company

1. Describe what is new or different about the subject matter of this invention:

The present disclosure uses pins of conical shape that do not go through the construct and have a larger surface area on stress contacting surfaces.

2. Advantages of this invention over what was done before and problems solved:

1. [REDACTED]
2. [REDACTED]
3. [REDACTED]
4. [REDACTED]
5. [REDACTED]

3. Describe your idea on attached sheets, providing whatever drawings or other sketches are necessary to completely describe the idea. Copies of engineering notebook sheets may be provided. All addendum sheets must be signed, witnessed and dated.

Inventor (Print Type): Jeffrey M. Gross

Address: 5944 Redman Cove
Memphis, TN 38120

Citizenship: USA

Signature

Date

Witness (Print Type): Carmen Larsen

Read, Witnessed and Understood

Signature

Date

Inventor: Thomas A. Simonson

Address: 335 Ayon Road
Memphis, TN 38117

Citizenship: USA

Signature

Date

Witness (Print Type): Carmen Larsen

Read, Witnessed and Understood

Signature

Date

Inventor

Address:

Citizenship:

Signature

Date

Signature Approval:

President, Technology Development

Inventor

Address:

Citizenship:

Signature

Date

Signature Approval:

President, Interbody Technologies

Rev. 11/10/98

INVENTION DISCLOSURE



Medtronic

SOFARON DAWER

Disclosure No. [REDACTED]

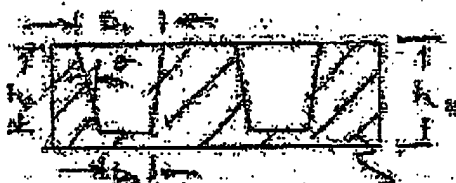
Project No. [REDACTED]

Sheet 1 of 1

Drawings and Description of Idea



- Cancellous Block
- Upper Cancellous Block (Shaded)
- Pin Cancellous Block
- Lower Cancellous Block



Cross-Section through Block

D_1 = pin diameter at surface at contact with loading

D_2 = pin diameter (constant)

h_1 = height of construct

h_2 = height of pin

θ = angle of pin

note: $D_1 \neq D_2$, θ = variable and optimized for specific needs and material strength

The angle of the hole drilled into the block may be less if it is cancellous ~~bone~~ in order to afford a higher pin strength, as the cancellous will crush to fit the cortical pin.

Inventor: Jeffrey M. Grobe Date: [REDACTED]

Inventor: Thomas A. Sintonen Date: [REDACTED]

Read, Witnessed and Understood Date: [REDACTED]

Read, Witnessed and Understood Date: [REDACTED]

Rev. 1/11/02

INVENTION DISCLOSURE



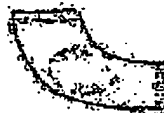
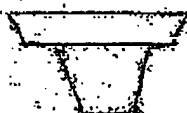
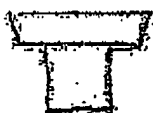
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Project No. [REDACTED]

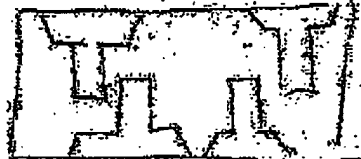
Sheet 1 of 1

Drawings and Description of Idea

Other PIN configurations



Having a variable configuration will allow pins to be placed on both top and bottom surfaces of the construct



[Signature] [REDACTED]
Inventor: James H. Grove Date

[Signature] [REDACTED]
Inventor: Thomas A. Simon Date

[Signature] [REDACTED]
Recd, Witnessed and Understood Date

[Signature] [REDACTED]
Recd, Witnessed and Understood Date

Rev. 1/1/00

INVENTION DISCLOSURE



Meritronic

Seaford, Delaware

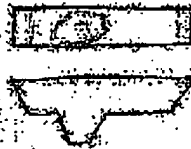
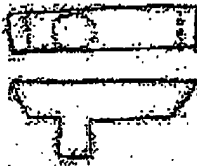
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Project No. [REDACTED]

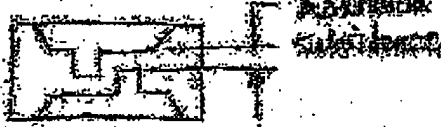
Sheet 6 of 6

Drawings and Description of Idea

Other pin configurations:



By offsetting the pin design and placing pins on both top and bottom surfaces of the construct, maximal subsidence for a maximum allowable subsidence can be designed into the construct. If subsidence occurs, it will give more for the same material than with each other.



Inventor: [Signature] [REDACTED] Date

Inventor: Thomas A. Simonian [REDACTED] Date

Read, Witnessed and Understood: [Signature] [REDACTED] Date

Read, Witnessed and Understood: [Signature] [REDACTED] Date

Rev. 11/10/03

INVENTION DISCLOSURE



Mestronic

SOPHOMOR DAMEX

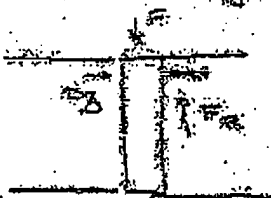
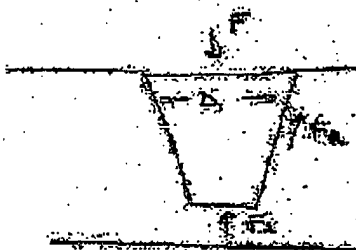
Disclosure No. [REDACTED]

Project No. [REDACTED]

Sheet 1 of 5

Drawings and Description of Idea:

Diagram for increased load bearing



$P_1 = \text{Pressure}$
 $P_2 = \text{Pressure}$
 $P_3 = \text{Pressure}$

Force to maintain 2nd in position

Force to maintain 2nd in position $P_1 + P_2 + P_3 = \text{Force to maintain 2nd in position}$

Equivalent Force $P_1 = P_2$

Diagram for reduced pressure on end plates

$P_1 + P_2 + P_3 = \text{Force to maintain 2nd in position}$

$P_1 = P_2$

$P_1 + P_2 = \text{Force to maintain 2nd in position}$

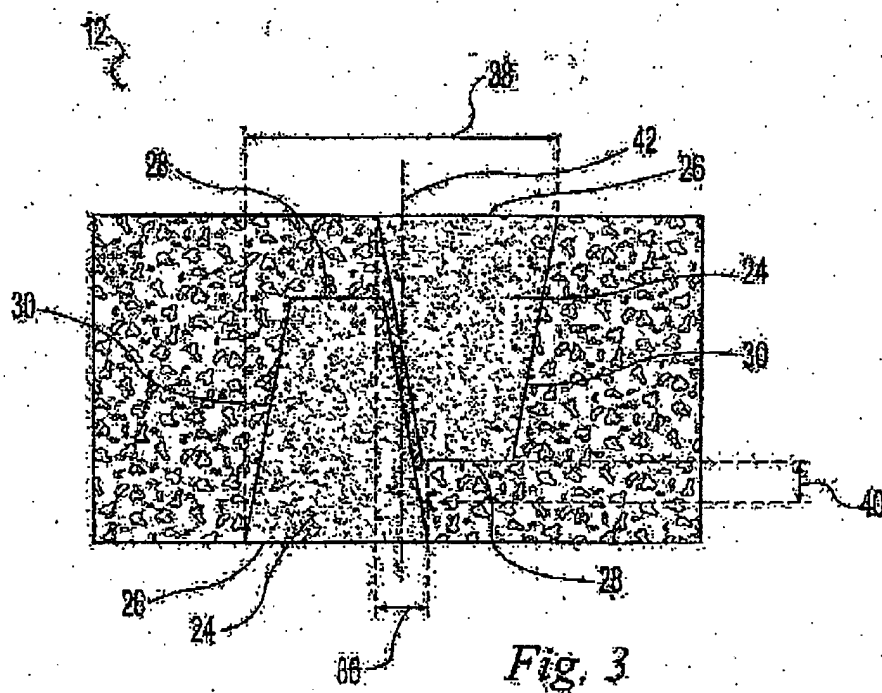
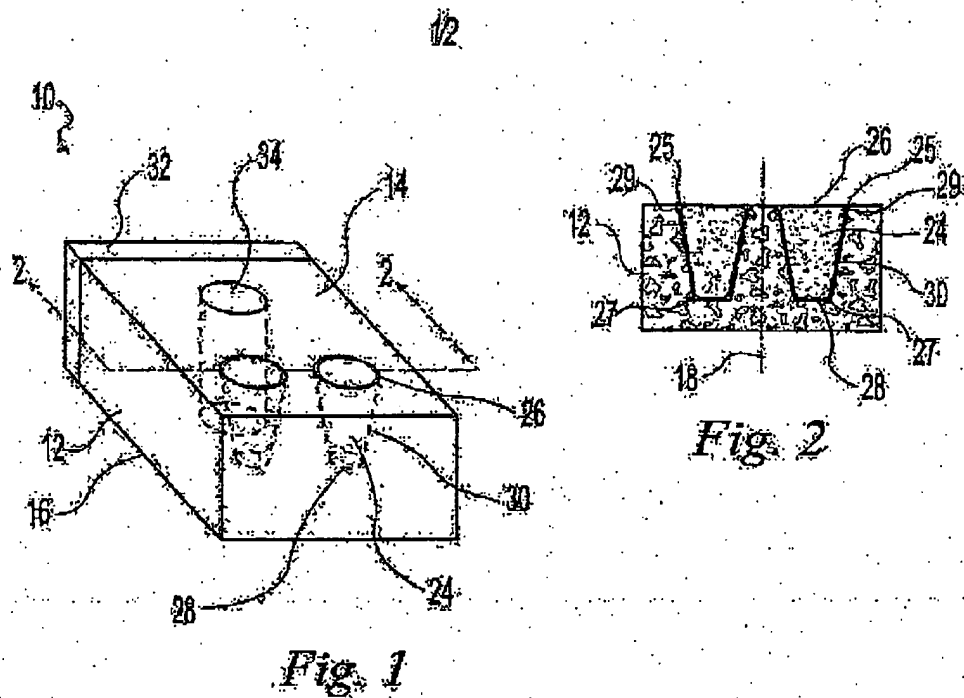
Inventor: [Signature] [REDACTED] Date

Inventor: Thomas A. Simonson [REDACTED] Date

Read, Witnessed and Understood [Signature] [REDACTED] Date

Read, Witnessed and Understood [Signature] [REDACTED] Date

Rev. 1/10/99



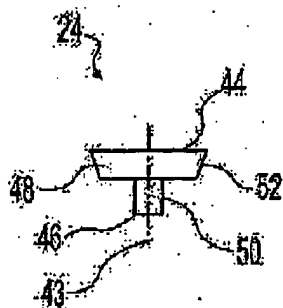


Fig. 4

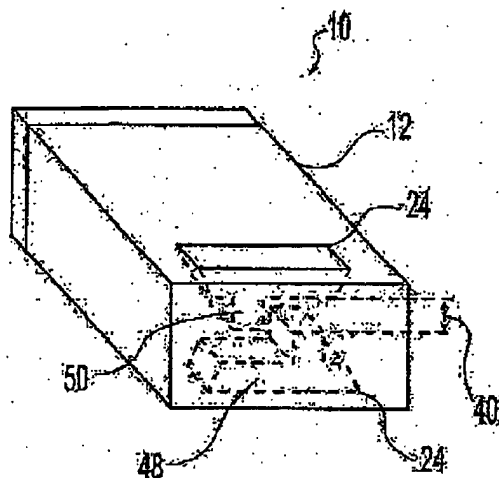


Fig. 7

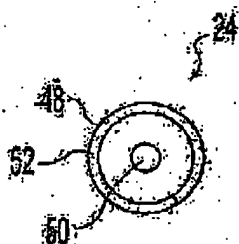


Fig. 5

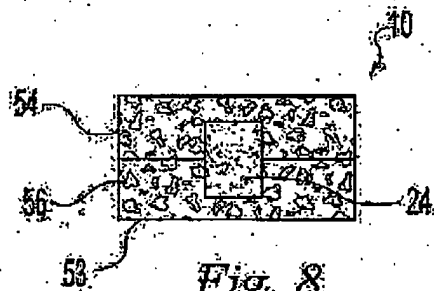


Fig. 8



Fig. 6

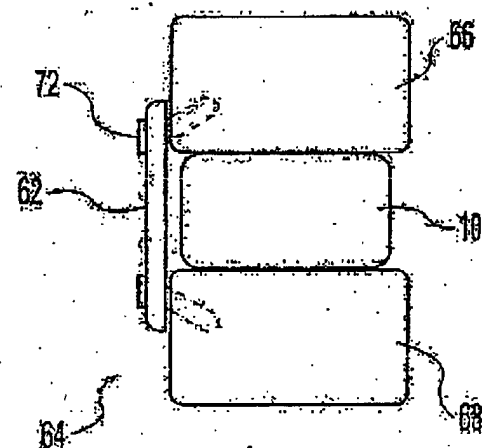


Fig. 9



Merriam-Webster's Collegiate[®] Dictionary

TENTH EDITION

Merriam-Webster, Incorporated
Springfield, Massachusetts, U.S.A.



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1. English language—Dictionaries. I. Merriam-Webster, Inc.

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190 chamaephyte • change

cham-ae-phyte 'ka-mi-fī' n [Gk *chamai* on the ground + *E-phyte* — more at **HUMBLE**] (1913): a perennial plant that bears its perennating buds just above the surface of the soil

cham-ber 'cham-bor' n [ME *chambr*, fr. OF, fr. LL *camera*, fr. L: arched roof, fr. Gk *kamara* vault] (13c): 1: ROOM esp: BEDROOM 2: a natural or artificial enclosed space or cavity 3: a hall for the meetings of a deliberative, legislative, or judicial body (the senate ~) 4: a room where a judge transacts business — usu. used in pl. c: the reception room of a person of rank or authority 4 a: a legislative or judicial body; esp: either of the houses of a bicameral legislature b: a voluntary board or council 5 a: the part of the bore of a gun that holds the charge b: a compartment in the cartridge cylinder of a revolver — **cham-bered** 'cham-bor' adj

cham-ber 'cham-bor' n [ME, fr. OF *chamberlain*, of Gmc origin; akin to OHG *chambrin* chamberlain, fr. *chamara* chamber, fr. LL *camera*] (13c): 1: an attendant on a sovereign or lord in his bed-chamber 2 a: a chief officer in the household of a king or nobleman b: TREASURER 3: an often honorary papal attendant; specif: a priest having a rank of honor below domestic prelate

cham-ber-maid 'cham-bor-māid' n (1587): a maid who makes beds and does general cleaning of bedrooms (as in a hotel)

cham-ber-music 'cham-bor-mūzīk' n (ca. 1789): music and esp. instrumental ensemble music intended for performance in a private room or small auditorium and usu. having one performer for each part

cham-ber of commerce (1797): an association of businessmen to promote commercial and industrial interests in the community

cham-ber of horrors (1849): a place in which macabre or horrible objects are exhibited; also: a collection of such exhibits

cham-ber orchestra n (ca. 1927): a small orchestra usu. with one player for each part

cham-bray 'cham-brā' n (1540): a bedroom vessel for urination and defecation

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Sir Walter Scott) 4: a winner of first prize or first place in competition; also: one who shows marked superiority (a ~ at selling)

champion v (1603) 1 archaic: CHALLENGE 2: to protect fight for as a champion 3: to act as militant supporter of: UP-ADVOCATE (always ~ the cause of the underdog) 4: to support

cham-pl-on-ship 'cham-plōn-ship' n (1825) 1: designation as champion 2: the act of championing 3: DEFENSE (as ~ of freedom of speech)

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